Author Response: Use of Clopidogrel and Poor Visual Outcome

We appreciate the interest of Kim in our article, “Baseline predictors for good versus poor long-term visual outcomes in the treatment of neovascular AMD with intravitreal anti-VEGF therapy” and wish to thank him for his comments. In his reply, the author brought attention to the relationship of clopidogrel use and associated poor visual outcome at 2 years. He suggested that an analysis reviewing the development of macular hemorrhages during the follow-up period and its contribution to poor visual outcomes may be helpful to clinicians.

In our initial investigation, we postulated that this association may have been related to antiplatelet and anticoagulant usage, which may increase the risk of hemorrhages in patients with neovascular AMD, therefore affecting long-term visual outcomes, but we did not specifically analyze the incidence of macular hemorrhages during our cohort’s follow-up period. We also hypothesized that the link observed in large population-based studies between inflammatory markers seen in ischemic cardiovascular disease and neovascular AMD may play a role.

Given the suspicion by Kim regarding the possible association of macular hemorrhages and visual outcomes, we reanalyzed our cohort and reviewed 147 eyes of 128 patients that had 2 years of treat-and-extend follow-up. The 14 eyes of patients taking clopidogrel were compared with the 133 eyes of patients who had not. Table 1 includes an analysis using a two-tailed t-test with Levene’s test of homogeneity of the total number of macular hemorrhages for each group and reports the comparison of the mean frequencies. We have found no statistical difference between the groups (P = 0.489). Table 2 also shows a nonsignificant difference between the two groups (P = 0.957) using a Pearson χ² binary analysis of the percentages of any macular hemorrhages in each group. Based on these analyses, our study does not suggest an association between clopidogrel use and poor visual outcomes associated with macular hemorrhages. Interestingly, there was a higher mean frequency of macular hemorrhages in patients not taking clopidogrel (Table 1).

Instead of indicating a higher risk for macular hemorrhages, clopidogrel use may represent a poor prognostic indicator in neovascular AMD patients due to the association of its use with significant ischemic heart disease and higher levels of inflammatory markers. Although our subsequent analysis is compelling, we are still limited by the overall number of patients taking clopidogrel in this analysis, and it is possible that a larger comparison is required to demonstrate a statistically significant difference. Further long-term studies of larger cohorts comparing the incidence of macular hemorrhages in those taking antiplatelet and other anticoagulants versus those who are not and their visual outcomes are highly anticipated.

Table 1. Association Between Mean Frequency of Macular Hemorrhages and Clopidogrel Use

<table>
<thead>
<tr>
<th></th>
<th>Mean (SE) Number of Macular Hemorrhages</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clopidogrel, N = 14</td>
<td>1.43 (0.416)</td>
<td>0.489</td>
</tr>
<tr>
<td>No clopidogrel, N = 133</td>
<td>1.92 (0.228)</td>
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</tbody>
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N, number of eyes; SE, standard error.

* P value < 0.05 was defined as statistically significant using a 2-tailed t-test with Levene’s test of homogeneity.

Table 2. Association Between Presence of Macular Hemorrhages and Clopidogrel Use

<table>
<thead>
<tr>
<th>Presence of Macular Hemorrhage, N (%)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clopidogrel, N = 14</td>
<td>8 (57)</td>
</tr>
<tr>
<td>No clopidogrel, N = 133</td>
<td>75 (56)</td>
</tr>
</tbody>
</table>

N, number of eyes.

* P value < 0.05 was defined as statistically significant using Pearson χ².

References


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